

IN THE CLAIMS

1. – 20. (cancelled).

21. (currently amended) A method of treating an ischemic region of a patient, comprising creating a concentration gradient of an angiogenesis stimulating substance in the ischemic region and/or in tissue of a region adjacent the ischemic region, wherein the concentration gradient is formed by creating a first lesion in the ischemic region or in the tissue of the region adjacent the ischemic region and creating a second lesion in the ischemic region or in the tissue of the region adjacent the ischemic region, and wherein the lesions have different sizes.

22. (currently amended) The method of claim 21, wherein ~~the tissue of the region~~ adjacent the ischemic region is non-ischemic.

23. (currently amended) ~~The method of claim 21~~ A method of treating an ischemic region of a patient, comprising creating a concentration gradient of an angiogenesis stimulating substance in the ischemic region and/or in tissue of a region adjacent the ischemic region, wherein the concentration of the angiogenesis stimulating substance is highest at about the center of the ischemic region.

24. (previously presented) The method of claim 21, wherein the concentration of the angiogenesis stimulating substance is higher in the ischemic region than in the tissue of the region adjacent the ischemic region.

25. (currently amended) The method of claim 24 21, wherein ~~the tissue of~~ the region adjacent the ischemic region is less ischemic than ~~the tissue of~~ the ischemic region.

26. (currently amended) The method of claim 24 23, wherein ~~the tissue of~~ the region adjacent the ischemic region is non-ischemic.

27. (currently amended) ~~The method of claim 21~~ A method of treating an ischemic region of a patient, comprising creating a concentration gradient of an angiogenesis stimulating substance in the ischemic region and/or in tissue of a region adjacent the ischemic region, wherein the concentration of the angiogenesis stimulating substance is lower in the ischemic region than in the tissue of the region adjacent the ischemic region.

28. (currently amended) A method of treating a region of ischemic tissue in a patient, comprising triggering the release of an angiogenesis stimulating substances to create a concentration ~~gradient~~ variance of the angiogenesis stimulating substances in the region of ischemic tissue and/or in tissue of a region adjacent the region of ischemic tissue, wherein the concentration variance is formed by creating a first lesion in the ischemic region or in the region adjacent the ischemic region and creating a second lesion in the

ischemic region or in the region adjacent the ischemic region, and wherein the lesions have different sizes.

29. (currently amended) The method of claim 28, wherein the angiogenesis stimulating ~~substances are~~ substance is released by the region of ischemic tissue.

30. (currently amended) ~~The method of claim 28~~ A method of treating a region of ischemic tissue in a patient, comprising triggering the release of an angiogenesis stimulating substance to create a concentration variance of the angiogenesis stimulating substance in the region of ischemic tissue and/or in tissue of a region adjacent the region of ischemic tissue, wherein the angiogenesis stimulating substances are substance is released by the tissue of the region adjacent to the region of ischemic tissue.

31. (previously presented) A method of treating ischemic myocardial tissue of a patient, comprising:

inserting into the patient a catheter having a tissue stimulating device;

positioning the tissue stimulating device on or near the ischemic myocardial tissue;

and

stimulating the ischemic myocardial tissue and/or myocardial tissue near the ischemic myocardial tissue without piercing or cutting the myocardial tissue to trigger the release of an angiogenic factor.

32. (previously presented) The method of claim 31, wherein the stimulation creates a concentration gradient of the angiogenic factor.

33. (currently amended) A method of claim ~~55~~31, further comprising:
repositioning the tissue stimulating device; and
stimulating the ischemic myocardial tissue and/or myocardial tissue near the ischemic myocardial tissue without piercing or cutting the myocardial tissue to trigger the additional release of the angiogenic factor.

34. (previously presented) The method of claim 33, wherein the stimulation creates a concentration gradient of the angiogenic factor.

35. (new) The method of claim 23, wherein the region adjacent the ischemic region is less ischemic than the ischemic region.

36. (new) The method of claim 27, wherein the region adjacent the ischemic region is less ischemic than the ischemic region or wherein the region adjacent the ischemic region is non-ischemic.

37. (new) The method of claim 28, wherein the region adjacent the ischemic region is less ischemic than the ischemic region or wherein the region adjacent the ischemic region is non-ischemic.

38. (new) The method of claim 30, wherein the region adjacent the ischemic region is less ischemic than the ischemic region or wherein the region adjacent the ischemic region is non-ischemic.

39. (new) The method of claim 31, wherein the tissue stimulating device produces a thermal lesion.

40. (new) The method of claim 31, wherein the tissue stimulating device includes a generator of ultrasound.

41. (new) The method of claim 31, wherein the tissue stimulating device generates heat and the method additionally comprises controlling the temperature of the tissue stimulating device.

42. (new) The method of claim 31, wherein the tissue stimulating device can produce multiple thermal lesions simultaneously.

43. (new) The method of claim 31, wherein the tissue stimulating device includes an array of transducers.

44. (new) The method of claim 43, wherein the array of transducers can be selectively activated.

45. (new) The method of claim 43, wherein each transducer within the array can be individually controlled.
46. (new) The method of claim 31, wherein the tissue stimulating device includes a transducer having a curved surface.
47. (new) A method of treating a patient, comprising:
inserting into the patient a catheter assembly having a tissue stimulating device;
positioning the tissue stimulating device over or near a ischemic region;
using the tissue stimulating device to cause the release of an angiogenic substance without piercing or cutting the tissue over which the tissue stimulating device is positioned.
48. (new) The method of claim 47, additionally comprising readjusting the positioning of the tissue stimulating device and causing the release of the angiogenic substance without piercing or cutting the tissue over which the tissue stimulating device is positioned.
49. (new) The method of claim 47, wherein the tissue stimulating device produces a thermal lesion.
50. (new) The method of claim 47, wherein the tissue stimulating device includes a generator of ultrasound.

51. (new) The method of claim 47, wherein the tissue stimulating device generates heat and the method additionally comprises controlling the temperature of the tissue stimulating device.

52. (new) The method of claim 47, wherein the tissue stimulating device can produce multiple thermal lesions simultaneously.

53. (new) The method of claim 47, wherein the tissue stimulating device includes an array of transducers.

54. (new) The method of claim 53, wherein the array of transducers can be selectively activated.

55. (new) The method of claim 53, wherein each transducer within the array can be individually controlled.

56. (new) The method of claim 47, wherein the tissue stimulating device includes a transducer having a curved surface.